

## CLAIMS

1. A fuel supply device comprising a pump which supplies a supply fuel under pressure and a fuel pressure control valve which is provided on a fuel outlet side of the pump for controlling a fuel supply pressure from the pump to a predetermined pressure, wherein the fuel supply device further includes a fuel takeout valve which has a valve opening pressure smaller than a valve opening pressure of the fuel pressure control valve for obtaining fuel for lubrication on the fuel outlet side, and a back pressure of a valve piston of at least the fuel pressure control valve is maintained at a fuel-low-pressure-side pressure of the pump.

2. A fuel supply device according to claim 1, wherein the valve piston of the fuel control valve is configured such that the valve piston is slidably housed in the inside of a cylinder and the valve piston is resiliently biased toward a pressure receiving port of the cylinder by a resilient biasing mechanism, fuel from the pump is supplied to the pressure receiving port, and an overflow port which is formed in the cylinder is closed or opened by the valve piston thus performing a fuel pressure control operation.

3. A fuel supply device according to claim 2, wherein the valve piston is formed of a hollow body which has a rear end thereof opened, and through a communication hole which is formed

in the valve piston to be communicated with the overflow port, the back pressure of the valve piston is maintained at the fuel-low-pressure-side pressure.

4. A fuel supply device according to claim 2, wherein the valve piston of the fuel takeout valve is configured such that the valve piston is slidably housed in the inside of a cylinder and the valve piston is resiliently biased toward a pressure receiving port of the cylinder by a resilient biasing mechanism, fuel from the pump is supplied to the pressure receiving port, and an overflow port which is formed in the cylinder is closed or opened by the valve piston thus obtaining the fuel for lubrication from the overflow port.

5. A fuel supply device according to claim 4, wherein a drain port which is formed in the cylinder of the fuel control valve and a drain port which is formed in the cylinder of the fuel takeout valve are connected with each other by way of a communication passage thus maintaining a back pressure of the valve piston of the fuel takeout valve at the fuel-low-pressure-side pressure.

6. A fuel supply device comprising a pump which supplies a supply fuel under pressure and a fuel pressure control valve which is provided on a fuel outlet side of the pump for controlling a fuel supply pressure from the pump to a predetermined pressure, wherein the fuel supply device further includes a fuel takeout valve which has a valve opening pressure

smaller than a valve opening pressure of the fuel pressure control valve for obtaining fuel for lubrication on the fuel outlet side, and back pressures of respective valve pistons of the fuel takeout valve and the fuel control valve are maintained at a fuel-low-pressure-side pressure of the pump.

7. A fuel supply device according to claim 6, wherein the valve piston of the fuel control valve is configured such that the valve piston is slidably housed in the inside of a cylinder and the valve piston is resiliently biased toward a pressure receiving port of the cylinder by a resilient biasing mechanism, fuel from the pump is supplied to the pressure receiving port, and an overflow port which is formed in the cylinder is closed or opened by the valve piston thus performing a fuel pressure control operation.

8. A fuel supply device according to claim 7, wherein the valve piston is formed of a hollow body which has a rear end thereof opened, and through a communication hole which is formed in the valve piston to be communicated with the overflow port, the back pressure of the valve piston is maintained at the fuel-low-pressure-side pressure.

9. A fuel supply device according to claim 7, wherein the valve piston of the fuel takeout valve is configured such that the valve piston is slidably housed in the inside of a cylinder and the valve piston is resiliently biased toward a pressure receiving port of the cylinder by a resilient biasing mechanism,

fuel from the pump is supplied to the pressure receiving port, and an overflow port which is formed in the cylinder is closed or opened by the valve piston thus obtaining the fuel for lubrication from the overflow port.